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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,207	08/01/2003	Robert J. Petcavich	13779-444	3285
45473 7590 12/09/2009 BRINKS, HOFER, GILSON & LIONE P.O. BOX 1340 MORRISVILLE, NC 27560				
EXAMINER				
CHAWLA, JYOTI				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
12/09/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/633,207

Applicant(s)

PETCAVICH, ROBERT J.

Examiner

JYOTI CHAWLA

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2009.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-6 and 12-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 2, 4-6 and 12-19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/21/09 has been entered. Claims 1 and 12, have been amended and claims 13-19 have been added to the current application. Claims 1-2, 4-6 and 12-19 are pending and examined in the current application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Determining the scope and contents of the prior art.
Ascertaining the differences between the prior art and the claims at issue.
Resolving the level of ordinary skill in the pertinent art.
Considering objective evidence present in the application indicating obviousness or nonobviousness.

(A) Rejection of claims 1-2 and 12 under 35 U.S.C. 103(a) as being unpatentable over Scott et al (US 2872325), in view of the combination of Nisperos Carriedo et al (US 5376391) and Liu (US 4710388) made in the previous office action dated October 29, 2008 have been withdrawn based on applicant's amendments to claims filed September 21, 2009.

(B) Rejection of claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott, in view of combination of Nisperos and Liu, as applied to claims 1-2 and 12 above, further in view of Yang et al (US 6165529) made in the previous office action dated October 29, 2008 have been withdrawn based on applicant's amendments to claims filed September 21, 2009.

(C) Rejection of claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scott, in view of combination of Nisperos and Liu, as applied to claims 1-2 and 12 above, further in view of Bice et al (US 3674510) made in the previous office action dated October 29, 2008 have been withdrawn based on applicant's amendments to claims filed September 21, 2009.

(D) Rejection of claims 1-2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al (US 2872325), in view of Lee (US 4729190) made in the previous office action dated October 29, 2008 have been withdrawn based on applicant's amendments to claims filed September 21, 2009.

(E) Rejection of claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott, and Lee, as applied to claims 1-2 and 12 above, further in view of Yang et al (US 6165529) made in the previous office action dated October 29, 2008 have been withdrawn based on applicant's amendments to claims filed September 21, 2009.

(F) Rejection of claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scott, and Lee, further in view of Bice et al (US 3674510). made in the previous office action dated October 29, 2008 have been withdrawn based on applicant's amendments to claims filed September 21, 2009.

(G) Claims 1-2, 4, 6, 12-15, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US 4729190), in view of Yang et al (US 6165529).

Lee teaches of coating composition including coating for seeds, i.e., for post harvest food (See Lee Column 10, line 57 to Column 11, line 12). Lee's coating composition comprises "copolymers of monocarboxylic acids and acrylic series with one or more polymerizable vinyl or vinylidene compounds, such as vinyl halides, vinyl acetate, vinyl benzoate...methyl methacrylate, ethyl acrylate...methacrylic acids and its esters, and the like" (Column 4, lines 20-43, Column 8, lines 9-15 and Column 9, lines 35-40), which includes polyvinylidene copolymers as recited in claims **1, 12, 13** and polyvinylidene chloride polymers with co-monomers as recited in claims **2** and **14**. Lee also teaches of non-ionic surfactants such as octylphenoxy polyethoxy ethanols (Column 6, lines 15-45), ethoxylated sorbitan monolaurates, palmitates, stearates or oleates (i.e., polysorbate) and Triton-N (trademark) which is described as nonylphenoxy polyethoxy ethanol, i.e., nonylphenoxy ethoxylate (see Examples 10-13 and 35), as recited in claims **1, 12, 13, 18 and 19**.

Regarding the amounts of polyvinylidene copolymer and surfactant Lee teaches that "a blend of polymeric carboxylic acid and an ethoxylated non-ionic surfactant at a weight ratio ranging at least from 1:20 to 20:1" (Column 4, lines 5-9). Further, Lee teaches of variable concentration of polymers and surfactants in the coating compositions, which include the recited proportions as instantly claimed by the applicants (See for example, example 35, which includes 25 parts 25% aqueous solution of polyacrylic acid and 5 parts of surfactant). Thus, coating compositions comprising polyvinylidene copolymer and surfactants octylphenol ethoxylates and nonylphenol ethoxylates were used as surfactants or emulsifiers in the art of food coating at the time of the invention. Furthermore it is noted that coating compositions for post harvest produce comprising polymer and surfactant proportions in the recited range were known at the time of the invention, as taught by Yang (See Column 2, lines 40-45). Yang teaches that the coating composition comprising 1-20 % by weight polyvinyl compound and 0.03 to 5%

by weight of a surfactant, which fall in applicants' recited range for claims **1 and 13**. The coating as taught by Yang limits but does not prevent respiratory exchange, thereby controlling and typically prolonging the maturation and ripening process of the post harvest produce, which results in increasing the permissible storage time between harvest and consumption (Yang, Column 2, lines 46-53).

Therefore, one of ordinary skill at the time of the invention would have been motivated to modify Lee and include polyvinylidene copolymer and surfactant in the amounts as taught by Yang at least for the purpose of including optimal amount of polymer and surfactant, such that the coating is effective in limiting respiratory exchange of gases in the post harvest produce and increasing the permissible storage time between harvest and consumption (Yang, Column 2, lines 46-53).

Regarding claims **4 and 15**, Lee teaches a coating composition with active ingredients, such as, germicides, medicaments fungicides, disinfectants, insecticides, pesticides, herbicides and other volatiles (i.e., antimicrobial) (Column 8, lines 48-54). Regarding the amount of active ingredient, Lee teaches of various examples including 0.5 parts of active ingredient, which falls in applicants' recited range for claim 9 (See Lee Example 29). Yang teaches a coating composition for post harvest produce and composition taught by Yang contains 0.05-5% antimicrobial agents, such as, triclosan or methylparaben (Column 3, lines 31-33), which encompasses the range taught by applicant in claim 9. Thus, antimicrobials, including methylparaben in the recited range of the applicant were known to be included in coating compositions for post harvest produce. It would have been obvious to one with ordinary skill in the art at the time of the invention to modify coating composition taught by Lee and include antimicrobial agent in the range as taught by Yang at least for the purpose of making the coating compositions that are effective in retarding the microbial growth and are specifically suited to a type of produce, length of storage (transportation/ ripening) and the storage conditions such as, humidity, temperature etc.

Regarding claims **6 and 17**, Lee teaches of a surfactant based on ethoxylated polydimethylsiloxane, however, the reference is silent as to role of polydimethylsiloxane as antifoam in the coating composition. Yang teaches addition of an antifoaming agent, such as polydimethylsiloxane, to the coating composition in a range 0.001 to 0.005% (Column 3, lines 34-36), which falls within the recited range of the applicant. One of ordinary skill in the art at the time of the invention would have been motivated to modify Lee based on the teachings from Yang, and employ an antifoaming agent in the coating emulsion in order to avoid unwanted foam. One would have been motivated to use an inert chemical antifoams based on silicone, such as polydimethylsiloxane, at least for the reasons that silicone based chemical antifoams such as, polydimethylsiloxane, are quick acting due to lower surface tension, and they are non-reactive to other process media and can be added to most compositions, and also remain effective for longer time.

(H) Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and Yang, further in view of IDS reference Bice et al (US 3674510), hereinafter Bice.

Lee in view of Yang is applied to claims and **1-2, 4, 6, 12-15, 17-19** above.

Regarding claims 5 and 16, Lee teaches a coating composition with active ingredients including antifungal agents (Column 8, line 50). Lee also teaches that non-ionic surfactant when used as a carrier for the active ingredient; active ingredient loading can be up to 50% or more (See Column 3, 45-50). Further, coating compositions having specific amount of antifungal agents in the coating composition were known at the time of the invention. For example, Bice teaches a coating composition for produce containing an antifungal agent (Abstract and Column3, lines 48-55). Bice reference teaches that 0.4-2 parts per million, i.e., 400-2000 parts per billion of an antifungal compound 2-(4-thiazolyl) benzimidazole (hereinafter TBZ), based on the weight of fruit

(Abstract, Column 3, lines 73-75 and Column 4, specially lines 40-45), which falls within the recited range of the applicant for claims 5 and 16. Thus, antifungal agents in the recited range of the applicant were known to be added to the food coating compositions (Bice). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee and include fungicide in the amount taught by Bice. One of ordinary skill in the art at the time of the invention would have been motivated to modify Lee at least for the purpose of including an effective amount of antifungal agent in the coating composition for retarding fungal growth in the coated post harvest food for a desired storage time, and under desired storage conditions.

Response to Arguments

Applicant's arguments filed 6/23/09 and 9/21/09, regarding newly amended claims 1-2, 4-6, 12 and new claims 13-19 have been fully considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JYOTI CHAWLA whose telephone number is (571)272-8212. The examiner can normally be reached on 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JC
Examiner
Art Unit 1794

/Keith D. Hendricks/
Supervisory Patent Examiner, Art Unit 1794